

## **CLAIMS**

What is claimed is:

1. A telephone system, comprising:

a transmitter in communication with a transmit signal path;

5 a receiver in communication with a receive signal path, the receiver having associated therewith a receiver gain;

a receiver gain detector configured to detect the receiver gain, the telephone system having a receiver stability level associated therewith; and

a controller in communication with the receiver gain detector, the controller  
10 being configured to operate the telephone system in a full duplex mode when the receiver gain is approximately less than the receiver stability level and to operate the telephone system in an adaptive duplex mode when the receiver gain is approximately above the receiver stability level, the adaptive duplex mode being such that an adaptive attenuation level alternately applied on the receive signal and transmit signal paths is dependent upon  
15 the level by which the receiver gain exceeds the receiver stability level.

2. The telephone system of claim 1, wherein the attenuation level alternately applied on the receive signal and transmit signal paths is approximately equal to the level by which the receiver gain exceeds the receiver stability level.

3. The telephone system of claim 1, wherein the receiver gain detector is  
20 configured to monitor the receiver gain throughout a telephone call and the controller adapts the attenuation level in accordance with the monitored receiver gain.

4. The telephone system of claim 1, further comprising a volume control by which a user may select a volume setting and a boost function selector by which the user may activate and deactivate a boost function, wherein the receiver gain detector is in communication with the volume control and the boost function selector and wherein the receiver gain is a function of the volume setting and the status of the boost function.

5. The telephone system of claim 1, wherein when the controller is operating in the adaptive duplex mode, the controller is further configured to switch between an active receive mode during which the controller applies the adaptive attenuation level on the transmit signal path and an active transmit mode during which the controller applies the adaptive attenuation level on the receive signal path.

6. The telephone system of claim 5, further comprising a transmit signal detector configured to detect a transmit path signal level on the transmit signal path, the transmit signal detector being in communication with the controller, wherein when in the adaptive duplex mode, the controller is alternately in the active receive mode and the active transmit mode depending upon the transmit path signal level.

7. The telephone system of claim 6, wherein when in the adaptive duplex mode, the controller is configured to switch to the active transmit mode when the transmit path signal level is at least equal to a predefined transmit signal threshold and to switch to the active receive mode when the transmit path signal level is less than the transmit signal threshold.

8. The telephone system of claim 1, wherein the full duplex mode is such that the controller applies zero attenuation to signals on the receive signal path and to signals on the transmit signal path.

9. The telephone system of claim 1, wherein the receiver stability level is  
5 between approximately 30 and 35 dB of gain.

10. An amplified telephone, comprising:  
means for detecting a receiver gain level selected by a user on the amplified  
telephone, the telephone having a receiver stability level associated therewith; and  
means for controlling the telephone to operate in full duplex when the  
10 receiver gain level is approximately less the receiver stability level and to operate in  
adaptive duplex when the receiver gain is at least the receiver stability level, the adaptive  
duplex being such that an adaptive attenuation level alternately applied on a receive  
signal path and a transmit signal path is dependent upon a level by which the receiver  
gain level exceeds the receiver stability level, the controlling means being in  
15 communication with the receiver gain detector.

11. The amplified telephone of claim 10, wherein the attenuation level  
alternately applied on the receive and transmit signal paths is approximately equal to the  
level by which the receiver gain exceeds the receiver stability level.

12. The amplified telephone of claim 10, wherein the means for detecting monitors the receiver gain throughout a call on the amplified telephone and the means for controlling adapts the attenuation level in accordance with the monitored receiver gain level.

5           13. The amplified telephone of claim 10, wherein the means for detecting detects the receiver gain level as a function of a user-selected volume setting and a user-selected boost function status.

14. The amplified telephone of claim 10, wherein the controlling means switches between an active receive mode and an active transmit mode when operating the  
10 telephone in adaptive duplex, the active receive mode being that the controlling means applies the adaptive attenuation level on transmit signals on the transmit signal path and the active transmit mode being that the controlling means applies the adaptive attenuation level on receive signals on the receive signal path.

15           15. The amplified telephone of claim 14, further comprising a transmit signal detecting means for detecting a transmit path signal level on the transmit signal path, the transmit signal detecting means being in communication with the controlling means, wherein when operating in adaptive duplex, the controlling means is alternately in the active receive mode and the active transmit mode depending upon the transmit path signal level.

16. The amplified telephone of claim 15, wherein when in adaptive duplex, the controlling means is configured to switch to the active transmit mode when the transmit path signal level is at least equal to a predefined transmit signal threshold and to switch to the active receive mode when the transmit path signal level is less than the transmit signal threshold.

17. The amplified telephone of claim 10, wherein operating in full duplex is such that the controlling means applies zero attenuation to signals on the receive signal path and to signals on the transmit signal path.

18. The amplified telephone of claim 10, wherein the receiver stability level is between approximately 30 and 35 dB of gain.

19. An adaptive duplexing method, comprising:  
detecting a receiver gain level selected by a user on a telephone, the telephone having a receiver stability level associated therewith; and  
controlling the telephone to operate in full duplex when the receiver gain level is approximately less than the receiver stability level and to operate in adaptive duplex when the receiver gain is at least the receiver stability level, the adaptive duplex being such that an adaptive attenuation level alternately applied on a receive signal path and a transmit signal path of the telephone is dependent upon a level by which the receiver gain level exceeds the receiver stability level.

20. The method of claim 19, wherein the attenuation level alternately applied on the receive signal and transmit signal paths is approximately equal to the level by which the receiver gain exceeds the receiver stability level.

21. The method of claim 19, wherein the detecting includes monitoring the receiver gain throughout a call on the telephone and the controlling includes adapting the attenuation level in accordance with the monitored receiver gain level.

22. The method of claim 19, wherein the detecting includes detecting the receiver gain level as a function of a user-selected volume setting and a user-selected boost function status.

23. The method of claim 19, wherein the controlling includes switching between an active receive mode and an active transmit mode when operating the telephone in adaptive duplex, the active receive mode being that the controlling includes applying the adaptive attenuation level on transmit signals on the transmit signal path and the active transmit mode being that the controlling includes applying the adaptive attenuation level on receive signals on the receive signal path.

24. The method of claim 23, further comprising detecting a transmit path signal level on the transmit signal path, wherein when in adaptive duplex, the controlling includes alternating between the active receive mode and the active transmit mode depending upon the transmit path signal level.

25. The method of claim 24, wherein when in the adaptive duplex, the controlling includes switching to the active transmit mode when the transmit path signal level is at least equal to a predefined transmit signal threshold and switching to the active receive mode when the transmit path signal level is less than the transmit signal  
5 threshold.

26. The method of claim 19, wherein when in full duplex, the controlling includes applying zero attenuation on the receive signal path and the transmit signal path.

27. The method of claim 19, wherein the receiver stability level is between approximately 30 and 35 dB of gain.